NOTE ON A NEW SIPUNCULID, *PHYSCOSOMA KURILENSE*, N. SP. FOUND IN SHUMSHIR ISLAND

HAYAO SATÔ (佐藤隼夫)

Biological Institute, Tôhoku Imperial University, Sendai

FOUR FIGURES

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By the courtesy of Mr. K. KOBA of the Hôten Educational Research Institute, I was sent three specimens of a sipunculid for identification.

The specimens were collected by Mr. J. BESSHO on December 30, 1930, on the beach of Shumshir, a small isle situated almost at the northern extremity of the Kurile Islands. They are referable to a species hitherto unknown. I propose to call it *Physcosoma kurilense*.

I wish to express my deep gratitude to Professor Dr. S. HÔZAWA of the Tôhoku Imperial University for his help rendered me in carrying out the present study. I also express my hearty thanks to Mr. K. KOBA for his kindness in sending me these valuable specimens.

A description of the species follows:

PHYSCOSOMA KURILENSE, n. sp.

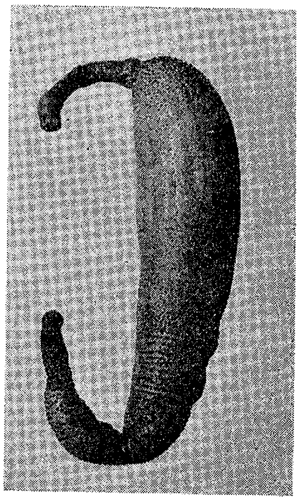

Fig. 1. *Physcosoma kurilense*, n. sp. Specimen selected as the type. Natural size.

The specimens are well preserved in alcohol.

Of the three specimens, the one (Fig. 1) which is selected as the type is the largest in size, measuring about 65 mm in trunk-length and about 12 mm in width in the middle of the trunk. The remaining two specimens are more or less smaller than the type.

In the type specimen, the introvert, which is half retracted, is much more slender than the trunk, measuring about 30 mm in length and 2–5 mm in thickness. The posterior extremity of the trunk is not stunted, but gradually tapers forming a rather bluntly pointed end.

The body-wall is dark gray and is covered with numerous skin-papillae of a deep brown colour. The skin-papillae found on the regions of the introvert-basis and on the posterior end of the trunk, are much larger and more crowded than the others found on the rest of the trunk. They measure 0.2–0.3 mm in diameter at the base and 0.15–0.25 mm in height. In the middle region of the trunk, the papillae (Fig. 2) are small and low, measuring 0.15-0.25 mm in diameter at the base and 0.1–0.15 mm in height. The base of each papilla is beset with numerous brown plates which become gradually smaller towards the peripheral border.

At the anterior end of the introvert, and close to the tentacular crown, there are about 60 circular rows of hooks, each of the hooks being about 0.06 mm high and 0.07 mm broad at the base. The hook (Fig. 3) has a curved apical tooth and is accompanied by a small blunt accessory tooth placed in the middle of its concave edge. In a side view, the hook shows a canal-like transparent streak bending in the middle. A short transverse bar is present at the base of each hook. Close to the posterior end of the bar, there occur a number of minute warts arranged in one row. Between each two rows of the hooks above mentioned, there are small perforated papillae arranged in a circular row. Numerous tentacles are found at the anterior end of the introvert.

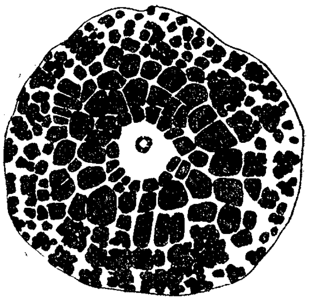

Fig. 2. A skin-papilla from the middle region of the trunk. ×150.

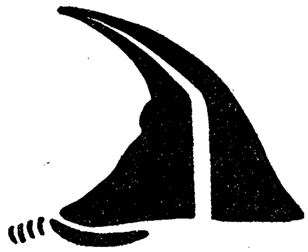

Fig. 3. A hook on the introvert. ×435.

The longitudinal muscle layer of the body-wall is divided into about 30 bands, but they anastomose here and there with others. In the region of the introvert they are fused to form a continuous sheet. The circular muscle-layer is continuous. Of two pairs of retractor muscles, the ventral pair (Fig. 4, vr) arise from the body-wall at the level of one-third of the trunk-length from the posterior end of the body. The dorsal pair (dr) are narrower than the ventral, and arise from the body-wall more anteriorly. A spindle-muscle (sm) arises from the body-wall at a point close to the anus, and is fixed to the posterior end of the trunk. The posterior one-third of the muscle is exposed

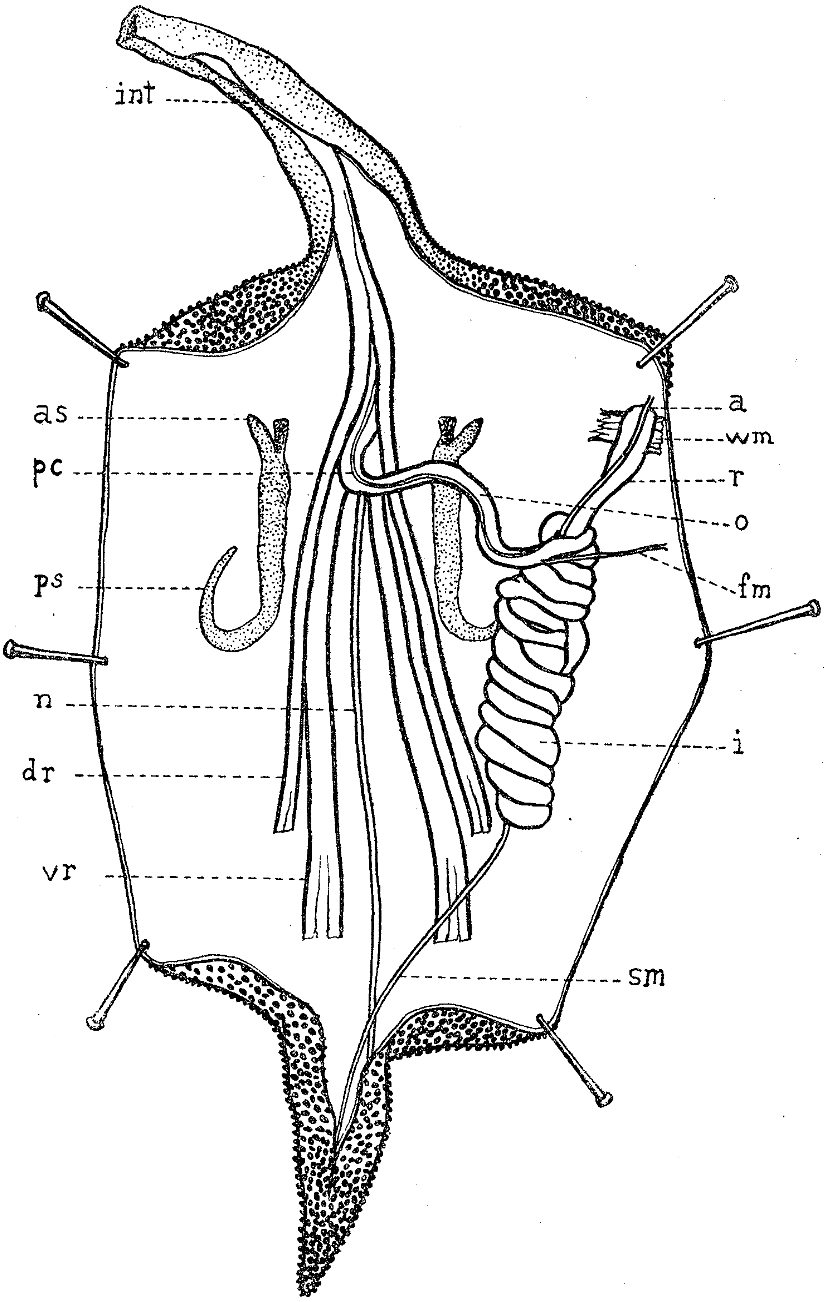

Fig. 4. *Physcosoma kurilense*, n. sp. A specimen dissected. a, anus; as, anterior lobe of the segmental organ; dr, dorsal retractor muscle; fm, fixing-muscle; i, intestinal convolution; int, introvert; n, ventral nerve-cord; o, œsophagus; pc, Polian canal; ps, posterior lobe of the segmental organ; r, rectum; sm, spindle-muscle; vr, ventral retractor muscle; wm, wing-muscle. ×2.

being unaccompanied by the intestinal convolution. A single fixing-muscle (fm), which springs from the anterior portion of the intestinal convolution, is attached to the body-wall. A pair of stout wing-muscles (wm) are present on both sides of the rectum (r) close to the anus. The intestinal convolution (i) consists of about 15 spirals, and its posterior end is not situated close to the posterior end of the body, but lies far anteriorly. No Polian tubules are found on the Polian canal (pc) which runs along the dorsal side of the œsophagus (o). The rectal diverticulum is absent. The anus (a) is situated almost at the same level as the external apertures of the segmental organs. The segmental organs are dark gray in colour, and each of the organs consists of two lobes. Of these two lobes, the one (as) is directed anteriorly and is much shorter than the other which is directed posteriorly (ps). The anterior half of the posterior lobe of the segmental organ is connected with the body-wall by means of mesentery. A pair of eye-spots are visible on the cerebral ganglion.

Locality. West coast of Shumshir Island (a small isle in the Kurile Islands).

Remarks. This new species closely resembles *Physcosoma japonicum* (Grube) in the form of the hooks as well as in the general anatomy of the body. But the former is easily distinguished from the latter in the peculiar feature of the segmental organ which has not yet been reported of the members of the genus *Physcosoma.*

From the zoogeographical view-point, the present species brings us great interest in that it is a unique species obtained from the Kurile Islands, and moreover in that its habitat represents the northern limit of the distribution of Sipunculoidea in Japan.